

SNAKES COLLECTED IN BURMA IN 1925

BY

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(With a Block)

My collection of snakes this year yielded 396 specimens, representing forty-eight species. Father Gilhodes sent me 129 specimens from Huton, in the Kachin Hills (4,500 ft.), and it is somewhat disappointing that among the 233 snakes collected by him in 1924 and 1925, no single specimen of the rare viper *Azemiops fea* should have been obtained. It may be that it frequents an altitude above Huton. Among others who contributed to this years total, I have to thank Mr. P. M. R. Leonard of Kutkai, North Shan States; Mr. D. W. Lawson at Skweli, North Shan States; Major Rodrigues at Taunggyi in the South Shan States; Major Cormack at Toungoo; and Mr. Pudden, I. F. S., in the Tenasserim Province.

The following new species has been discovered. *Rhabdophis speciosus*.

The collection does not give an accurate estimate of the numerical strength of all the species, as I had to discourage those kind enough to work for me, from preserving large specimens, owing to the difficulty of sending spirit out to remote jungle localities. Such species as the larger *Coluber* and *Ptyas*, *Python*, *Naia*, and *Vipera russelli*, etc., were purposely rejected.

Family—TYPHLOPIDÆ.

Typhlops braminus. (Daudin).

Seven examples from Mandalay and Maymyo. Two of these measuring 75 mm. (3 in.) were killed in Maymyo in August and September. One was recovered from the stomach of a coral snake (*Calliophis maclellandi*).

Typhlops diardi. Schlegel.

Twenty specimens from Maymyo, and 20 from Huton, Kachin Hills.

Colour. One pale grey specimen was about to desquamate. The loose epithelium when removed revealed a pale grey colouration beneath, which tends to confirm my earlier observations (*Bombay Natural History Journal*, vol. xix, p. 609) entitling such specimens to the status of a colour variety under the name *cinereus*.

FOES. One was extracted from the stomach of a coral snake (*Calliophis maclellandi*).

GROWTH. (a) *The young*. Four measuring 96, 96, 98 and 100 mm. ($3\frac{7}{8}$, $3\frac{7}{16}$, and 4 in.) appeared to have been very recently born.

(b) *Early Life*. Specimens measuring 125 mm. (5 in.) in May, 138, 140, 150, and 160 mm. ($5\frac{1}{2}$, $5\frac{3}{8}$, 6 and $6\frac{3}{8}$ in.) in June, July and early August are clearly progeny of the previous year, and indicate a growth of about 50 mm. (2 in.) in the first year of life. Three specimens 216, 220 and 238 mm. ($8\frac{5}{8}$, $8\frac{3}{4}$ and $9\frac{1}{2}$ in.) in May and July appear to represent broods of nearly two years growth, showing an increase of about 50 mm. (2 in.) in the second year of life.

(c) *Maturity*. A gravid female 238 mm. ($9\frac{1}{2}$ in.) long in May shows that the species is sexually mature before attaining an age of two years.

(d) *Maximum Length*. My largest was a female 418 mm. (1 ft $4\frac{1}{2}$ in.).

BREEDING. (a) *Method of reproduction*. This year's collecting establishes the fact that this snake is viviparous. One killed in July contained four embryos that measured 44 mm. ($1\frac{3}{4}$ in.) when unravelled. These were contained in sacs, and were clearly visible through the investing membranes.

(b) *The Brood*. Seven females were gravid, and contained from 4 to 14 eggs or sacs.

(c) *Season*. Four of the above contained very small eggs in May, others, eggs in a more advanced state in June and July, and the one containing sacs was killed on the 28th of July. Young of the year already alluded to measuring from 96 to 100 mm. ($3\frac{7}{8}$ to 4 in.) were killed in September.

Family—BOIDÆ.

Python molurus (Linné).

Four specimens from Zimba Chaung, Tavoy District ; Sedaw 16 miles from Mandalay and from near Maymyo.

HABITS. (a) *Disposition.* The one killed near Maymyo, 9 ft. in length was seen reclining on the ground and shot in jungle, and made no attempt to escape. The one killed in Tavoy, over 6 ft. in length was seen with its head beneath a rock, its body being too distended with a recent meal to permit further ingress to its retreat. This struck at the coolies who found it, and was despatched with a gunshot.

FOOD. The Tavoy specimen was enormously distended, and was found to contain a mouse deer (*Tragulus minimus*) in an advanced state of pregnancy.

BREEDING. (a) *Sex.* The nine footer killed near Maymyo proved to be a male. The clasper is a cylindrical uniramic organ about 3 in. long, bifid at the extremity. It is encircled with loose folds, and has none of those recurved processes so characteristic of most Colubrine and Viperine species. At the base the anal glands contained an abundant secretion amounting perhaps to a drachm on each side, of an opaque dirty ochraceous fluid. Pressure squirted out a jet of this matter to a distance of about two feet.

(b) *Season.* Two juvenile specimens were found together at Sedaw on June 27, a fact which suggests that they had been recently hatched. One measured 628 and the other 685 mm. (2 ft. and $\frac{3}{4}$ in. and 2 ft. 3 in.).

Python reticulatus (Schneider).

The skins of five specimens, all killed in the Tenasserim Province, were sent to me for examination. The largest measured in life 13 ft. 3 in.

LEPIDOSIS. *Costals.* Two heads-lengths behind the head 57, at mid-body 75, two heads-lengths before the vent 39. *Ventrals.* 308. *Subcaudals.* 90.

Family—ILYSIIDÆ.

Cylindrophis rufus (Laurenti).

One specimen from Sahmaw, Myitkyina District in the plains on the West bank of the Irrawaddy.

LEPIDOSIS. *Ventrals.* 212. *Subcaudals.* 6 on left side, 7 on right. The 1st, 2nd, 3rd, 6th and 8th entire.

Family—XENOPELTIDÆ.

Xenopeltis unicolor (Reinwardt).

Two specimens, one from Toungoo, and one from Sawmah in the Myitkyina District.

FOOD. One contained a small frog in the stomach.

Family—COLUBRIDÆ.

Polyodontophis collaris (Gray).

Six examples all from Huton, Kachin Hills.

FOOD. A large skink (*Mabuia*) had been swallowed by one.

BREEDING. Two females both killed before June 6 were eggbound.

One of these measuring 506 mm. (1 ft. 8 in.) contained two very elongate eggs 35 by 6 mm. ($1\frac{3}{4}$ by $\frac{1}{4}$) in length. The other 584 mm. (1 ft. 11 in.) long, contained four eggs more than an inch in length.

Natrix khasiensis (Boulenger).

SYNONYMY. *Natrix gilhodesi* Wall. *Bom. Nat. Hist. Journ.*, vol. xxx, p. 587.

I have had 48 more specimens of this snake this year all from Huton, Kachin Hills. This further material compared with a long series of *khasiensis* from the Khasi Hills sent for my examination from the Indian Museum, Calcutta and Bombay collections, bridges over the apparent differences of my earlier specimens from the Kachin Hills, which led me to think these constituted a distinct species. The acquisition of three skulls, where last year I had but one, shows agreement with the dentition of Khasi Hills specimens.

FOOD. A single frog had furnished the meal in eleven subjects, and two frogs were extracted from the stomach of one.

GROWTH. (a) *Early Life.* Three specimens measuring from 232 to 272 mm. ($9\frac{1}{4}$ to $10\frac{3}{4}$ in.) in June, July and early August represent the broods hatched out last year. Twelve specimens from 386 to 436 mm. in length ($15\frac{1}{4}$ to $17\frac{1}{4}$ in.) in June, July and early August appear to represent broods hatched out in the autumn of 1923.

(b) *Maturity.* Two egg-bound females measuring 430 and 436 mm. (1 ft. 5 in. and 1 ft. $5\frac{1}{4}$ in.) indicate that the species is sexually mature before attaining two years of age.

(c) *Maximum Length.* The largest male was 562 mm. (1 ft. $10\frac{1}{4}$ in.), and the largest female a similar length.

BREEDING. (a) *Method of Reproduction.* It is almost certainly oviparous, as eggs over an inch long have a tough white investment.

(b) *The Clutch.* No less than sixteen females were egg-bound, and contained from one to four eggs.

(c) *Season.* All the egg-bound subjects were killed in June, July and early August. It seems probable that eggs are not hatched out until the autumn.

Natrix trianguligera (Boie).

A single example was sent to me from Minhla in the Thayetmyo District and was killed on the banks of the Irrawaddy. This extends the previously known habitat, which until now was restricted to the Tenasserim Province.

COLOURATION. It is dark olive green with ill-defined and obscure quin-cuniate dark spots, less indistinct anteriorly. The belly is dirty white, the bases of all ventrals and subcaudals conspicuously black. There is a periocular buff zone, and the upper labials have black posterior borders.

LEPIDOSIS. *Ventrals.* 144. *Subcaudals.* 83.

DENTITION. *Maxilla.* Supports 27 teeth; syncranterian, anododont, feebly coryphodont. *Palatine.* 24; feebly kumatodont. *Pterygoid.* 40 to 43; feebly scaphiodont. *Mandibular* 38 to 39; feebly kumatodont.

Natrix venningi (Wall).

SYNONYMY. *Natrix nigriventer* Wall. *Bom. Nat. Hist. Journ.*, vol. xxx, p. 588. An unaccountable error in the description of *venningi* (*Bomb. Nat. Hist. Journ.*, vol. xx, p. 774) led to my describing *nigriventer* as a distinct species. In describing *venningi*, I recorded the costals as being disposed in 19 rows whereas they number only 17. In subsequent references to this snake, I have always looked up the printed description, and therefore perpetuated the error. Only recently I discovered that the scales are recorded as 17 invariably in my notebooks. The acquisition this year of a skull of *nigriventer* from the Kachin Hills, showed the dentition agreed with *venningi*, and led to the discovery of my mistake.

I acquired three specimens this year from Huton, Kachin Hills.

FOOD. One was found to have eaten two large and four small tadpoles.

BREEDING. A female killed before June 6, proved to be egg-bound and contained two large eggs 37 by 7 mm. ($1\frac{1}{2}$ by $\frac{5}{16}$ in.).

LEPIDOSIS. *Costals.* In 17 rows in the whole body length. *Ventrals.* 155, 160, and 163. *Subcaudals.* 129, 134 and 143.

DENTITION. *Maxilla.* Carries 32 to 33 teeth; syncranterian, anododont, feebly coryphodont. *Palatine* 17 to 18; anododont, feebly kumatodont. *Pterygoid* 23? to 25; anododont, scaphiodont. *Mandibular.* 30? to 31? feebly kumatodont.

Natrix clerki (Wall).

A single specimen from Sinlum Kaba, Kachin Hills described by me in this journal (vol. xxx, p. 809).

Natrix biteniata (Wall).

Five specimens all from Huton, Kachin Hills. Described by me in this journal (vol. xxx, p. 806). Has been confused hitherto with *Rhabdophis parallelus* (Boulenger).

Nerodia modesta (Günther).

Four specimens from Huton, Kachin Hills.

BREEDING. A female measuring 574 mm. (1 ft. $10\frac{3}{4}$ in.) killed between June 6 and August 12, contained three large eggs in the oviducts 35 by 10 mm. ($1\frac{3}{8}$ by $\frac{3}{8}$ in.).

LEPIDOSIS. *Ventrals.* ♂ 156 and 160, ♀ 149. *Subcaudals.* ♂ 118, ♀ 107.

DENTITION. *Maxilla.* Carries 29 to 32 teeth; syncranterian, anodont, coryphodont, the last three slightly enlarged. *Palatine.* 18 to 20; feebly kumatodont. *Pterygoid.* 23 to 26; scaphiodont. *Mandibular.* 33 to 34; feebly kumatodont.

Nerodia piscator (Scheider).

Thirty-six examples from Rangoon, Shweli, Maymyo, and Huton, Kachin Hills.

Rhabdophis stolatus (Linné).

Fifty-three specimens from Maymyo, Kutkai, Shweli, North Shan States; Toungoo, Mandalay, Myitkyina; and Huton, Kachin Hills.

FOOD. A single frog found in the stomach of several.

BREEDING. Three were egg-bound and contained from 7 to 11 eggs. Two of these were killed at Maymyo in June.

Rhabdophis subminiatus (Schlegel).

Seventeen were killed in Maymyo, one in Katha, and nine at Huton, Kachin Hills.

FOOD. One contained a toad, and two a single frog.

GROWTH. Young of the year were represented in Maymyo by one 275 mm. (11½ in.) in May, one 287 mm. (11½ in.) in June, one 240 mm. (9⅝ in.) in July, and one 323 mm. (12¾ in.) in September. Broods hatched in 1924 were represented by one 475 mm. (1 ft. 6¾ in.) in March, one 562 mm. (1 ft. 10¼ in.) in June, one 562 mm. (1 ft. 10¼ in.) in August, and one 418 mm. (1 ft. 4½ in.) in September. Broods hatched in 1923 were represented by three 710, 760, 785 mm. (2 ft. 4 in., 2 ft. 6 in. and 2 ft. 7 in.) in July, three measuring 735, 774 and 885 mm. (2 ft. 5 in. and 2 ft. 11 in.) in August. Hatchings of 1922 were represented by one 1165 mm. (3 ft. 10 in.) in May.

BREEDING. No female was acquired in an egg-bound condition.

Rhabdophis speciosus (Wall).

This species described by me in this journal (vol. xxx, p. 734) was represented by three subjects all killed before June 6 at Huton, Kachin Hills. A ♂ measured 804 mm. (2 ft. 7¾ in.), another ♂ 710 mm. (2 ft. 4 in.) and a ♀ 614 mm. (2 ft. ½ in.).

LEPIDOSIS. *Ventrals.* ♂ 166 and 168, ♀ 167. *Subcaudals.* ♂ 86 and 87, ♀ 87.

Rhabdops bicolor (Blyth).

Three examples, all adult males from Huton, Kachin Hills. These measured 492, 512, and 518 mm. (1 ft. 7⅞ in., 1 ft. 8¼ in., 1 ft. 8⅜ in.).

FOOD. One had eaten what appeared to be a slug, and another an arachnoid with eight legs but devoid of any hair. The last segment of the limbs was compressed and had a few bristles beneath.

LEPIDOSIS. *Ventrals.* 190, 191 and 192. *Subcaudals.* 54, 62 and 64.

The tongue of this snake is peculiar in having extremely long points, fully an inch from the point of bifurcation.

Trirhinopholis nuchalis (Boulenger).

Six specimens from Huton, Kachin Hills; and Kutkai and Maymyo in the North Shan States.

LENGTH. The largest was a ♂ which taped 457 mm. (1 ft. 6 in.).

BREEDING. A female captured before June 6, measuring 430 mm. (1 ft. 5 in.) proved to be egg-bound. The eggs, seven in number, measured 28 by 6 mm. (1⅓ in. by ¼ in.) and contained embryos that would be about 25 mm. (1 in.) long if unravelled.

LEPIDOSIS. *Ventrals.* ♂ 124 to 130, ♀ 139 to 140. *Subcaudals.* ♂ 24 to 27, ♀ 23 to 26. In one the 2nd to the 5th were entire, and in another the 3rd was entire.

The testes in this species are remarkably large, being over an inch long.

Lycodon aulicus (Linné).

Six specimens from Mergui, Toungoo, Shweli in the Mongmit District, and Sahmaw in the Myitkyina District.

FOOD. One had swallowed a gecko.

Lycodon fasciatus (Anderson).

Eight examples from Huton, Kachin Hills and Maymyo. All the five Maymyo specimens were killed at dusk, or after dark, and in houses. Two had clambered up the masonry to an upper story.

FOOD. One had eaten a skink.

BREEDING. One female killed at Huton, Kachin Hills before June 6, contained 5 eggs in the oviducts, and another killed between June 6 and August 12, contained 4 eggs.

A slough found in a bathroom showed no traces of the black bands which are such a conspicuous feature of the species.

Ptyas mucosus (Linné).

Nine specimens from Maymyo and Taunggyi.

FOOD. A large toad had been eaten by one.

BREEDING. A female measuring 1930 mm. (6 ft. 4 in.) killed on April 23, contained eight large eggs in the oviducts.

Ptyas carinatus (Günther).

The skin of a large specimen measuring 2845 mm. (9 ft. 4 in.), tail 530 mm. (1 ft. 9 in.), killed by Mr. Pudden's coolies when in camp at Thebyn Chung, Tavoy River, Tenasserim, was sent to me for examination.

COLOURATION. It is olive-brown dorsally with a series of light irregular and broken crossbars. In the posterior third of the body there are six black stripes which end at the vent. The uppermost of these involves the upper half of the 4th, the 5th, and lower half of the 6th rows. The median involves the contiguous halves of the 2nd and 3rd rows. The lowest involves the lower half of the ultimate row, and the edges of the ventrals. On the tail the scales are margined with black, leaving a round light ocellus in the middle. Belly yellowish with an irregular black median stripe.

LEPIDOSIS. *Rostral*. The rostro-nasal sutures are nearly twice the rostro-internasal and fully twice the rostro-labial. *Internasals*. A pair; the suture between them rather less than half that between the praefrontal fellows. *Praefrontals*. A pair; the suture between them about two-thirds the length of the frontal shield. *Frontal*. Touches 6 shields. *Supraoculars*. As long as the praefrontals and internasals taken together, a shade longer than the frontal, two-thirds to three-fourths the parietals. *Loreal*. One. *Praeocular*. One. *Postoculars*. Two. *Temporals*. 2+2. *Supralabials*. 10; the 1st and 2nd touching the nasals, the 5th, 6th and 7th the eye, and the 8th and 9th the lower anterior temporal. *Sublinguals*. The posterior rather longer than the anterior, in contact with the 6th and 7th infralabials. *Costals*. In 16 rows two heads-lengths behind the head to a point 3 or 4 heads-lengths behind mid-body where the 3rd and 4th rows blend. The scales further reduce to 12 about two heads-lengths before the vent, the 3rd row disappearing at this spot. Two median rows strongly keeled, and the next row feebly keeled in mid-body. Posteriorly four rows are strongly carinate. Apical facets paired. *Ventrals*. 212. *Anal*. ?. *Subcaudals*. 67 in pairs. (The tail may be slightly incomplete).

Zamenis korros (Schlegel).

One specimen from Fort Hertz in the Putao District.

Coluber porphyraceus Cantor.

Three specimens, one from Maymyo, one from Taunggyi, South Shan States, and one from Huton, Kachin Hills.

BREEDING. The one from Taunggyi killed before the 15th of June contained five eggs in an early stage of development.

Coluber prasinus (Blyth).

Four specimens; two from Maymyo and two from Huton, Kachin Hills. One female measured 1,133 mm. (3 ft. 8 $\frac{3}{4}$ in.).

Coluber radiatus (Schlegel).

Four examples from Taunggyi, South Shan States; Namtu, North Shan States; Fort Hertz, Putao District; and Huton, Kachin Hills.

Coluber oxycephalus (Boie).

The skin of one was sent to me by Mr. Pudden, i.f.s., killed at Yebusan, near Migyaunglaung, Tenasserim. This measured 2,410 mm. (7 ft. 11 in.), the tail (incomplete) 480 mm. (1 ft. 7 in.).

Dendrophis pictus (Gmelin).

Seven specimens, one from Huton, Kachin Hills, two from Maymyo and four from Mergui, Tenasserim.

Oligodon herberti (Boulenger).

One specimen from Huton, Kachin Hills.

LEPIDOSIS. *Ventrals*. 206. *Subcaudals*. 36.

Oligodon theobaldi (Günther).

One specimen from Shweli, Mongmit District.

Oligodon albocinctus (Cantor).

Ten examples from Huton, Kachin Hills.

FOOD. Two were found to have feasted on ophidian eggs. In one there were four eggs of *Rhabdophis subminiatus* containing embryos measuring 175 mm. (7 in.). Another contained four eggs probably of *R. subminiatus*, the embryo measuring 125 mm. (5 in.). A third specimen had swallowed the eggs of a snake or lizard. One of these 25 mm. (1 in.) long was impacted in the mouth, and another had been swallowed.

Oligodon purpurascens (Schlegel).

Twenty-five examples from Maymyo, Namtu, and Shweli, North Shan States; Sahmaw, Myitkyina District; Toungoo; and Mergui.

COLOURATION. A fine series of twenty from Maymyo, exhibit a wonderful variety in colour and markings. Six of these conform to variety *cyclurnus*, characterized chiefly by the absence of the quadrimacular crossbars so typical of variety *maculatus*. Both varieties ranged from a ground colour like a boiled prawn, through ruddy browns to a deep cigar brown. One specimen was a transitional form connecting the two varieties, by exhibiting very obscure, quadrimacular bars, faintly traceable in the posterior part of the body. The Mergui specimen conformed to variety *maculatus*.

BREEDING. (a) *Method of Reproduction*. The size and character of eggs in the oviducts make it practically certain that the species is oviparous.

(b) *The Clutch*. Four egg-bound females contained respectively 6, 11 and 16 eggs.

(c) *Season*. Two were found egg-bound in May, and another in July, but the season probably extends over half the year judging from the growth of this year's specimens. Thus one example measured 470 mm. (1 ft. 6½ in.) in March, and another 458 mm. (1 ft. 6 in.) in September. Again three specimens measured 600 mm. (1 ft. 11¾ in.) in April, one 595 mm. (1 ft. 11½ in.) in May, one 575 mm. (1 ft. 10¾ in.) in June, one 575 mm. (1 ft. 10¾ in.) in July, one 584 mm. (1 ft. 11 in.) in August, and one 600 mm. (1 ft. 11¾ in.) in October. A specimen 192 mm. (7¾ in.) long in October, was the only representative of this year's hatching.

LEPIDOSIS. *Supralabials*. These are subject to great variation. The 2nd and 3rd, or the 4th and 5th are sometimes confluent. The 4th and 7th are sometimes cuneate and fail to reach the edge of the lip. The 4th is sometimes divided into an upper and a lower part. *Costals*. These are usually in 19 rows to just behind mid-body, and then become 17 owing to a confluence of the 4th and 5th, or 5th and 6th rows. In three specimens they were in 21 rows in parts. In all of these the 5th row divided and the resultant rows blended and redivided two or three times, before reducing to 19, and finally to 17.

GENITALIA. These are diramic, and completely devoid of any of the recurved processes usually seen in Colubrines.

Oligodon splendidus (Günther).

One example from Mandalay. This was encountered by an orderly at night in the British Station Hospital, who narrowly escaped being bitten by it.

Liopeltis frenatus (Günther).

One specimen from Huton, Kachin Hills. This was a male with 163 ventrals and 95 subcaudals. The 2nd and 3rd infralabials were confluent on both sides.

Dipsadomorphus multimaculatus (Boie).

Six specimens from Maymyo and Toungoo. One was found coiled up in a letter box. One killed on December 7, had evidently retired into winter quarters selecting a hole in a log. An orderly carrying this on his shoulder from the stack to the house, had the disagreeable experience of seeing the snake gliding leisurely down his coat.

FOOD. One had swallowed a lizard of the genus *Calotes*.

BREEDING. A female killed on August 21, carried 7 eggs in the oviducts nearly fit for deposition.

Dipsadomorphus hexagonotus (Stoliczka).

Three specimens from Huton, Kachin Hills and Maymyo.

BREEDING. One killed between June 6 and August 12, contained three large eggs in the oviducts measuring over 50 mm. (2 in.) in length. A young one killed on August 30, measuring 330 mm. (1 ft. 1 in.) was evidently recently hatched.

LEPIDOSIS. *Costals*. The scales were in 19 rows at mid-body in all.

Psammodynastes pulverulentus (Günther).

Five specimens from Huton, Kachin Hills, and near Kya In, Amherst District (1,500 ft.).

FOOD. Two had swallowed a frog.

Chrysopelea ornata (Shaw).

Five specimens from Mandalay, Meiktila and Mergui.

One fell from the roof on to the tea-table among the assembled guests, and another was encountered at night on a staircase.

COLOURATION. The two Mergui examples were black with a centro-basal yellow spot on each scale. A series of vermilion spots on the spine from nape to vent. The head is barred black, and orange.

BREEDING. A female killed on May 23, was full of eggs, but having been shot to pieces these could not be counted.

Laticauda laticaudata (Linné).

One fine female from the Andamans measured 888 mm. (2 ft. 11 in.).

BREEDING. This contained five large sterile eggs in the oviducts measuring 43 by 18 mm. ($1\frac{3}{4}$ by $\frac{3}{4}$ in.). The date of capture is not on record.

Bungarus fasciatus (Schneider).

Two specimens from near Taunggyi, South Shan States at 3,000 ft. elevation; and Sahmaw, Myitkyina District. One encountered at night in a verandah wreathed itself round a servant's leg who managed to kick it off without being bitten. When searched for with a lamp, it was found in the low branches of a bush.

Bungarus multicinctus (Blyth).

Three specimens from Fort Hertz, Putao District; and Ani Sakan near Maymyo (3,000 ft.).

One was killed at night in a house. One measured 1,040 mm. (3 ft. 5 in.) another 1,015 mm. (3 ft. 4 in.), and the third 1,028 mm. (3 ft. $4\frac{1}{2}$ in.) The last when skinned and pegged out was 1,238 mm. (4 ft. and $\frac{3}{4}$ in.).

COLOURATION. One had 20 white bars on the body and 7 on the tail, and another 31 bars on the body and 10 on the tail.

FOOD. One contained a small mammal in the stomach.

GENITALIA. These are uniramial, cylindrical organs beset with small recurved processes.

Naia hannah (Cantor).

Three specimens from Tenasserim; and Shweli, Mongmit District.

One was chased up a stream and shot, another seen skulking in a bamboo clump was also shot. The third a hatchling, was observed moving about in a mysterious manner in a pool of water. Investigation proved that it was being firmly held by a fresh water crab. On being landed the crab released its grasp, and escaped leaving the snake almost dead on the bank. On examination I found the spine had been completely severed by the crab's claw.

FOOD. One measuring 2,515 mm. (8 ft. 3 in.) was found to have swallowed a large green snake.

BREEDING. *Season.* The hatchling alluded to measure L. 538 mm. (1 ft. 9¼ in.). This was encountered on September 15, a date which considerably increases the previously known appearance of the young. The only other date that I am aware of being my own observation of hatching out at the end of May in the Nilgiri Hills.



The above photograph shows the male organ of the King Cobra to which reference was made in my recent paper on ('Snakes collected in Burma in 1924,' vol. xxx, No. 4, p. 820). A pair of hamadryads discovered *in copula* by Mr. Plunkett, I.F.S., were both shot by him; they were dragged apart and the male organ was amputated and preserved in spirit. As stated in my previous article it appears to be a diramic organ of one side and is so markedly different from examples of these organs in the cobra (*Naia naia*) in my possession, as to justify *N. hannah* being placed in a distinct genus. Each limb of the organ is about 152 mm. (6 in. long), from the point of bifurcation to the extremity. A *raphè* passes up the posterior part. The basal four-fifths is surrounded by prominent transverse, somewhat imbricate folds resembling the gills of a mushroom. Most of the folds extend uninterruptedly right round the organ, others are discontinuous. In the distal fifth the folds are broken up to form a sort of honeycomb.

LEPIDOSIS. *Ventrals.* 244. *Subcaudals.* 93; the first to the twelfth entire.

Naia naia (Linnè).

Three specimens from Impelet, 40 miles from Mandalay; Namtu, North Shan States (2,000 ft.); and Myingyan.

COLOURATION. The Namtu specimen differs from all others with which I am acquainted. It is a young one of variety *fasciata*, measuring 388 mm. (1 ft. 3¼ in.). It is black with narrow white bars growing more and more

distinct posteriorly. The bars are interrupted over the spine. The belly is black with white bars anteriorly growing fainter posteriorly.

A specimen of variety *fasciata* of a similar length from Myingyan is a uniform light olive-brown, thus conforming to the type usually seen in Burma.

Calliophis macclellandi (Reinhardt).

Eight specimens from Maymyo all of variety *macclellandi*.

One specimen was found at night on a staircase. One caught on the road at night was sent to me alive and unscathed. It proved a very lively creature when liberated, making repeated endeavours to escape. When arrested with a stick it flattened the whole body to a very remarkable degree.

FOOD. One had swallowed a large *Typhlops diardi*, and another a full grown *Typhlops braminus*.

BREEDING. A female measuring 598 mm. (1 ft. 11½ in.) killed on July 8 contained fourteen eggs in the oviducts, with embryos that measured about 25 mm. (1 in. in length).

Family—AMBLYCEPHALIDÆ.

Amblycephalus macularius (Theobald).

Four specimens from Kalaw, South Shan States; Maymyo and Shweli, North Shan States; and Huton, Kachin Hills.

HABITS. One of these was found beneath a stone, and when touched made no attempt to escape, but curled itself into a knot. Another juvenile specimen was also dislodged from beneath a stone.

FOOD. One had swallowed two slugs.

GROWTH. A young one measuring 140 mm. (5½ in.) was killed on August 2.

LEPIDOSIS. Agrees in the following points in all. *Praeocular*. One. *Subocular*. One, crescentic. *Postocular*. One. *Sublabials*. 7, the 1st and 2nd touching the nasal, the 2nd, 3rd, 4th and 5th the subocular, and the 5th and 6th the lower anterior temporal; 7th very long equalling the 4th, 5th and 6th taken together. *Temporals*. In one specimen the two upper were confluent on the right side forming a very long shield. In this respect it agrees with the type of *A. andersoni*, a form I consider should rank as *macularius* (Rec. Ind. Mus. 1922, p. 24). *Ventrals*. ♂ 142 to 150, ♀ 163. *Subcaudals*. ♂ 39 to 42, ♀ 41.

DISTRIBUTION. One specimen taken at Shweli at about 800 ft. close to Hills that ascend to over 3,000 ft. All the other localities are over 3,000 ft.

Family—VIPERIDÆ.

Trimeresurus gramineus (Shaw).

Nine specimens from Toungoo; Maymyo and Muse, North Shan States; Sahnaw, Myitkyina District; and Huton, Kachin Hills.

HABITS. One brought to me alive moved in a remarkable manner. It threw forward its body, and then advanced the head and forebody till straight, and repeated the action. It thus appeared to progress sideways, and did so in a laboured fashion. This struck viciously at a stick, and also at the forceps used when trying to grasp its neck. One lying in the grass wreathed itself round the hand of a grass cutter and struck at him, but failed to implant its teeth.

One was found beneath a stone, and another reclining on a post.

FOOD. One had swallowed a small mammal.

LEPIDOSIS. *Costals*. All had the scales in 21 rows at mid-body.

GENITALIA. These organs are diramic, and smooth except at the tips where there are small recurved processes.

EYES. These in a live specimen were a brilliant ruby-red.

SKIN. This is remarkably loose, so that when pegged out the interspaces are broader than the scale rows. The beautiful vivid green fades to black within an hour or two of its removal.

Trimeresurus monticola (Günther).

Five juvenile specimens from Huton, Kachin Hills, killed in June, July and August. Three measuring 203, 227 and 245 mm. (8¼, 9 and 9¾ in.) appear to be this year's production.